

PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
JOHN RICHARDS
LADAS & PARRY
26 WEST 61ST STREET
NEW YORK, NY 10023

WRITTEN OPINION

(PCT Rule 66)

Applicant's or agent's file reference		Date of Mailing (day/month/year) 26 AUG 2004	
34042		REPLY DUE within 2 months/days from the above date of mailing	
International application No. PCT/US03/35657	International filing date (day/month/year) 10 November 2003 (10.11.2003)	Priority date (day/month/year) 13 November 2002 (13.11.2002)	
International Patent Classification (IPC) or both national classification and IPC IPC(7): F25J 1/00 and US Cl.: 62/611, 612, 613			
Applicant CONOCOPHILLIPS COMPANY			

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

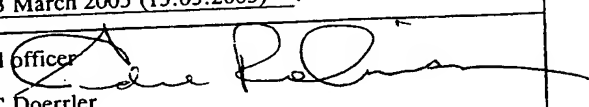
When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 13 March 2005 (13.03.2005).

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Form PCT/IPEA/408 (cover sheet)(July 1998)

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I. Basis of the opinion

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
pages 1-27, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the claims:
pages 28-46, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the drawings:
pages 1-4, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages None
- ☒ the claims, Nos. None
- ☒ the drawings, sheets/fig None

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

International Application No.
PCT/US03/35657

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO
Inventive Step (IS)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO
Industrial Applicability (IA)	Claims <u>Please See Continuation Sheet</u>	YES
	Claims <u>Please See Continuation Sheet</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 60-66, 68-70, 72, 74, 75 and 126 lack novelty under PCT Article 33(2) as being anticipated by Houser et al. Houser shows a process for liquefying a natural gas stream which cools the stream 122 in indirect heat transfer with a methane containing stream 460 and then separates the cooled stream into a first stream which is compressed (by compressor 462) and a second stream which is further cooled by a methane containing stream (stream 420 is cooled by stream 476). Figure 1 shows the cooling using heavier hydrocarbons in a cascade refrigeration system.

Claims 81 and 132 lack an inventive step under PCT Article 33(3) as being obvious over Houser et al. Houser et al discloses applicants' basic inventive concept, a natural gas liquefying system which cools and splits the incoming stream, substantially as claimed with the exception of revaporizing the stream and using a computer to simulate the process. Natural gas is typically revaporized prior to use and as such the revaporization of the LNG would have been obvious to an ordinary practitioner in the art. Computer simulations are also well known in the art to provide a design tool to design systems without incurring expensive prototypes. The use of computer simulations of known processes are therefore also considered obvious to an ordinary practitioner in the art.

Claims 1-59, 67, 71, 73, 76-80, 82-125, 127-131 and 133 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest flashing a natural gas stream in a plurality of stages and conducting the flash gas as well as the vapor from the final flashing to a storage tank. The percentages of claims 67 and 71, which are also found in claims 76-80 and 82-131 are also not taught by the prior art.

Claims 1-133 meet the criteria set out in PCT Article 33(4), and thus possess industrial applicability because the subject matter claimed can be made or used in industry.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

V.1. Reasoned Statements:

The opinion as to Novelty was positive (Yes) with respect to claims 1-59, 67, 71, 73, 76-125 and 127-133

The opinion as to Novelty was negative (No) with respect to claims 60-66, 68-70, 72, 74, 75 and 126

The opinion as to Inventive Step was positive (Yes) with respect to claims 1-59, 67, 71, 73, 76-80, 82-125 and 127-131 and 133

The opinion as to Inventive Step was negative (NO) with respect to claims 60-66, 68-70, 72, 74, 75, 81, 126 and 132

The opinion as to Industrial Applicability was positive (YES) with respect to claims 1-133

The opinion as to Industrial Applicability was negative (NO) with respect to claims NONE